

ABSTRACT OF THE DISCLOSURE

The present invention, in one form, is a fuel pump having increased pump inlet suction and outlet pressures as compared to known fuel pumps. Such pressure increases enable use of one fuel pump even with an engine including multiple cylinder banks, and facilitates elimination of vapor and air bubbles in the fuel. The fuel pump also does not include small, or narrow passages that are prone to be clogged by dirt or the like. More specifically, and in one embodiment, the fuel pump includes a pump housing including an inlet and an outlet. An inlet nozzle extends from the inlet, and an outlet nozzle extends from the outlet. The inlet nozzle is configured to be coupled to a fuel line extending from a fuel tank, and the outlet nozzle is configured to be coupled to a fuel line extending to the engine block. The pump further includes first and second pump inlet covers. Each cover includes an air nozzle. The air nozzles are configured to be coupled to air lines extending from select cylinders of the engine as described below in more detail. The covers and the housing form first and second pumping chambers. The pump also includes a first check valve located within the inlet nozzle and a second check valve located within the outlet nozzle. A first diaphragm and a first spring are located in the first pumping chamber, and a second diaphragm and a second spring are located in the second pumping chamber. The first pumping chamber is in flow communication with a passage through the inlet nozzle, and the second pumping chamber is in flow communication with a passage through the outlet nozzle. The first pumping chamber is in flow communication with the second pumping chamber via a check valve.